RECIPIENT

SPECIFICATIONS

Product No. : X1E000431000116

MODEL : FA1612AS

SPEC. No. : A20-326-0B

DATE : Sep. 8. 2020

SEIKO EPSON CORPORATION

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SPECIFICATIONS

1. Application

1) This document is applicable to the crystal unit that is delivered to from Seiko Epson Corp.

2) This product complies with RoHS Directive.

3) This product supplied (and any technical information furnished, if any) by Seiko Epson Corporation shall not be used for the development and manufacture of weapon of mass destruction or for other military purposes. Making available such products and technology to any third party who may use such products or technologies for the said purposes are also prohibited.

4) This product conforms to automotive part standard " AEC-Q200 ".

5) This product listed here is designed as components or parts for electronics equipment in general consumer use. We do not expect that any of these products would be incorporated or otherwise used as a component or part for the equipment, which requires an systems, and medical equipment, the functional purpose of which is to keep extra high reliability, such as satellite, rocket and other space life.

6) This FA2016ASA is authorized for use of Autonomous ACU (Auto parking system) for automobile only.

2. Product No. / Model

The product No. of this crystal unit is X1E000431000116.
The model is FA2016ASA

3. Packing

It is subject to the packing standard of Seiko Epson Corp.

4. Warranty

Defective parts which originate with us are replaced free of charge in the case of defects being found with 12 months after delivery.

5. Amendment and/or termination

Amendment and/or termination of this specification is subject to the agreement between the two parties.

6. Contents

Item No.	Item	Page
[1]	38.4 MHz Crystal specification	2-3
[2]	GPS Qualification	4-7
[3]	Thermistor Specifications	7
[4]	How to find the curve fitting parameters	8
[5]	Environmental and mechanical characteristics	9
[6]	Dimensions and circuit	10
[7]	Recommended soldering pattern and marking layout	11
[8]	Notes	12

[1] 38.4 MHz Crystal Specifications

■Standard 4-pin crystal footprint with the crystal connected between pins 1 and 3

Table 1 38.4 MHz 2016 package size crystal specifications

Parameter	Min	Nom	Max	Units	Notes
Operating frequency		38.4		MHz	
Mode of vibration		AT-cut fundamental			
Initial frequency tolerance	-10		+10	$\times 10^{-6}$	Frequency tolerance : 25 °C ±3 °C the Drive level test conditions 10 uW for the initial frequency tolerance specs.
Tolerance over temperature	-12		+12	$\times 10^{-6}$	-30 °C to +85 °C; below -30 °C and above 85 °C tolerance over temperature, bound by a third-order coefficient range.
	-30		+30	$\times 10^{-6}$	-40 °C to +105 °C
Aging	-0.7		+0.7	$\times 10^{-6}$/year	
Frequency drift after reflow	-2		+2	$\times 10^{-6}$	After two reflows
Operating temperature	-40		+105	°C	
Storage temperature	-40		+125	°C	
Equivalent series resistance			50	Ω	
Quality factor (Q)	75,000				The minimum Q value calculated from ESR and L is smaller than this specification.
Spurious mode series resistance	1100			Ω	±1 MHz
Pullability	7		16	$\times 10^{-6}$/pF	
Load capacitance		8		pF	The load capacitance is measured according to IEC Standard #60444-7.
Inflection point	27.5		30.5	°C	$t = (to - \frac{C2}{3C3})$
C1, first-order curve fitting parameter Refer to the Curve Fit Calculation Table Spreadsheet(80-V9690-23)	-0.4		-0.1	$\times 10^{-6}$/°C	The curve fitting parameter is obtained from the Qualcomm crystal curve fitting algorithm ([4], calculation order C0, C1, C3, and C2) using the temperature inflection point t0 = 29 °C.
C2, second-order curve fitting parameter Refer to the Curve Fit Calculation Table Spreadsheet(80-V9690-23)	-4.5×10^{-4}		4.5×10^{-4}	$\times 10^{-6}$/°C^2	The curve fitting parameter is obtained from the Qualcomm crystal curve fitting algorithm ([4], calculation order C0, C1, C3, and C2) using the temperature inflection point t0 = 29 °C.
C3, third-order curve fitting parameter Refer to the Curve Fit Calculation Table Spreadsheet(80-V9690-23)	8.5×10^{-5}		11.5×10^{-5}	$\times 10^{-6}$/C^3	The curve fitting parameter is obtained from the Qualcomm crystal curve fitting algorithm ([4], calculation order C0, C1, C3, and C2) using the temperature inflection point t0 = 29 °C.
Drive level	10		200	μW	
Insulation resistance	500			MΩ	
Package		2.0 × 1.6		mm^2	

Table 2 Specification for DLD measurement of the crystal

	Item	Max. – Min.	Repeatability	Condition
Drive level dependency	Freq.	< 6 ppm	< 0.7 ppm	0.01 µW to 200 µW to 0.01 µW
	ESR	< 20 %	< 10 %	

Notes:

1. Number of points: 15 points up and 15 points down = 29 total data points.
2. Max - min: Difference between the maximum and minimum in a two-way measurement. For ESR, the change rate is (max - min)/min < 20 %.
3. Repeatability: Repeatability of two-way measurement in the above condition. For ESR, the change rate is (ESR2 - ESR1)/ESR1 < 10 %.
4. ESR1: First measurement on each drive level.
5. ESR2: Second measurement on each drive level; for example, how to specify each parameter.

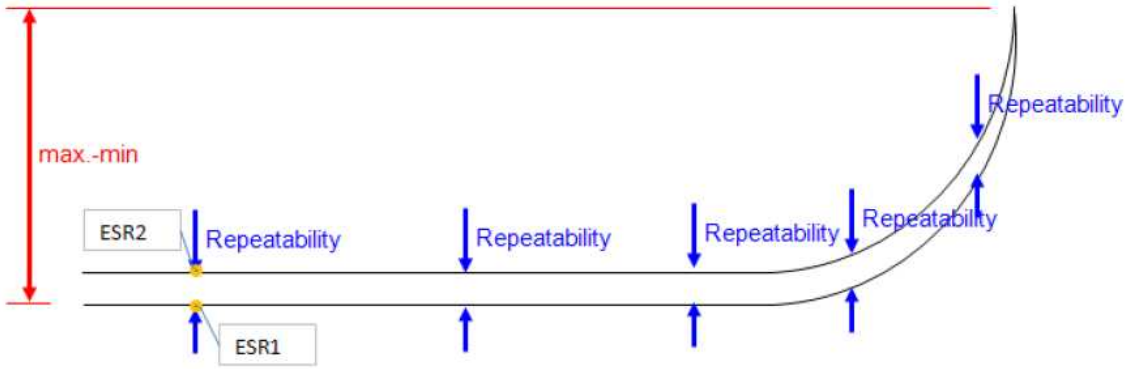


Figure 1 Crystal perturbation specification 3 (DLD testing requirements)

6. Test instructions for DLD measurement of the crystal:
   □ DLD testing should be done on every device to detect fabrication issues such as contamination, particles of dust, and so on, and to verify proper crystal functionality.

[2] GPS Quality Specifications

Table 3 Crystal perturbation specification 1 (residual frequency stability slope)

Item	Condition	Specification	Unit
Residual frequency stability slope (residual = difference from fifth-order curve fit)*	Ta = -40 °C to -30 °C	±100	× 10^{-9}/°C
Residual frequency stability slope	Ta = -30 °C to +85 °C	±50	× 10^{-9}/°C
Residual frequency stability slope	Ta = +85 °C to +105 °C	±100	× 10^{-9}/°C
5 °C small orbit hysteresis 1*	Ta = -40 °C to -30 °C	±250	× 10^{-9}/°C
5 °C small orbit hysteresis 1*	Ta = -30 °C to +85 °C	±50	× 10^{-9}/°C
5 °C small orbit hysteresis 1*	Ta = +85 °C to +105 °C	±250	× 10^{-9}/°C

* Must meet the 1A and 1B conditions:

■ Condition 1A – Test condition (continuous temperature rate change of ~1.0°C/minute):

- Measure FT points every 1°C, heating up from -40 to +105°C, subtract a fifth-order polynomial best fit, and then calculate the slope of the residual.
- The residual slope should be within ±50 ppb/°C (Ta = -30 to +85°C). See Table 3 for extreme temperature specifications.

■Condition 1B – Hysteresis 1 test condition (continuous temperature rate change of ~1.0°C/minute):

- Measure FT points every 0.5°C while cycling the temperature over a 5°C small temperature orbit; an example 5°C small orbit temperature cycle is +30°C to +35°C to +30°C.
- During every individual heating/cooling cycle, there should be 11 points; discard the first point of each heating and cooling cycle; this leaves 10 points for each heating and cooling cycle. Subtract the fifth-order polynomial best fit from 1A for each of the 10 points, and then calculate the slope of the residual for each of these heating and cooling 10-point curves.
- The residual slope should be within ±50 ppb/°C (Ta = -30 to +85°C). See Table 3 for extreme temperature specifications.

Table 4 Crystal perturbation specification 2 (small orbit hysteresis 2)

Item	Condition	Specification (magnitude)	Unit
5 °C small orbit hysteresis 2**	Ta = -40 °C to -30 °C	400	× 10^{-9} pk-pk
5 °C small orbit hysteresis 2**	Ta = -30 °C to +85 °C	100	× 10^{-9} pk-pk
5 °C small orbit hysteresis 2**	Ta = +85 °C to +105 °C	400	× 10^{-9} pk-pk

Note: * Must meet condition 2: Hysteresis 2 test condition (continuous temperature rate change of ~1.0°C/minute):

- Measure FT points every 0.5°C while cycling temperature over a 5°C small temperature orbit; an example 5°C small orbit temperature cycle is +30°C to +35°C to +30°C.
- During every individual heating/cooling cycle, there should be 11 points; discard the first and last point of each heating and cooling cycle, which results in nine temperature points. Calculate the average measured peak-to-peak frequency difference for these nine temperature points.
- The average difference is the magnitude of the small orbit hysteresis 2.

GPS Test instructions and purpose of these tests/specifications

1. Testing: At a minimum, specifications 1A, 1B, and 2 process control confirmation testing is recommended to be done on a sampling basis for every lot.

2. The purpose of specifications 1A, 1B, and 2:
   - Specification 1A (see Figure 2 for details):
   - Verify that the FT curve can fit with a fifth-order polynomial.
   - Verify that there are no package resonances and no micro jumps that exceed the residual frequency stability slope specification.

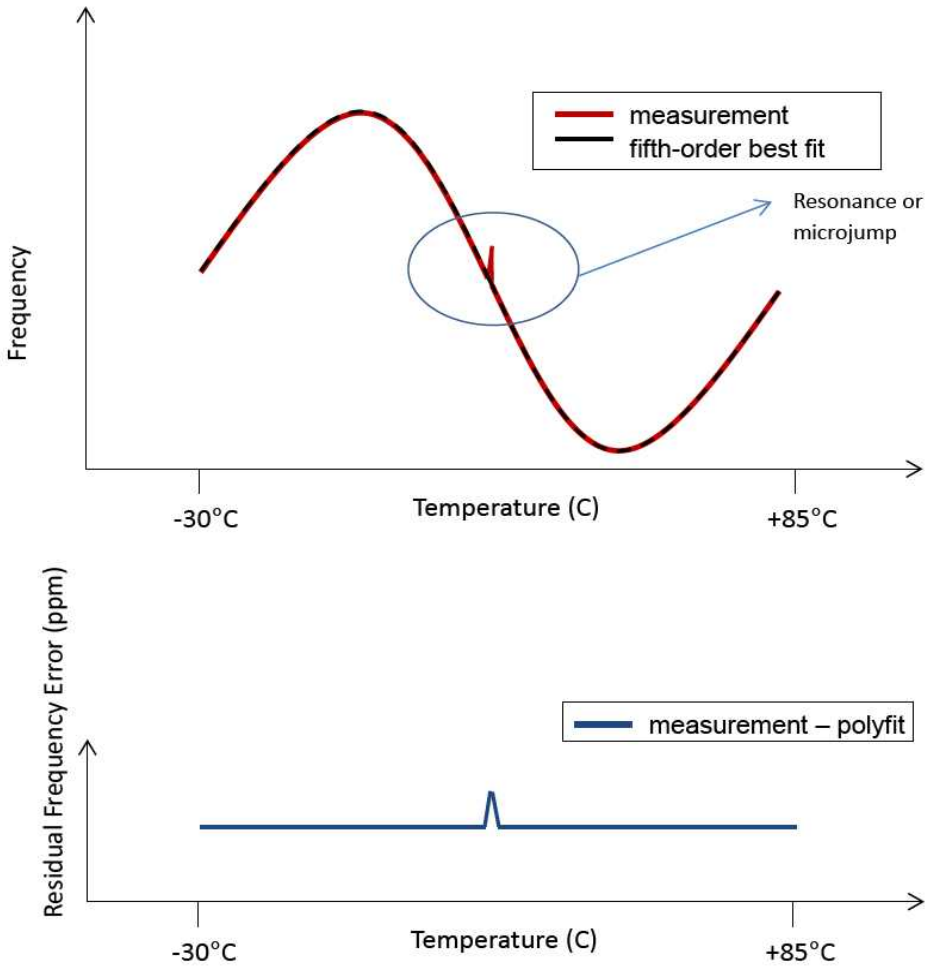


Figure 2 Measurement to locate resonances or micro-jumps

Specification 1B (see Figure 3 for details): Verify that the small orbit hysteresis 1 is controlled to less than 50 ppb/°C (Ta = -30 to +85 °C) residual slope in the crystal (departure from the FT curve over small orbits). See Table 3 for extreme temperature specifications.

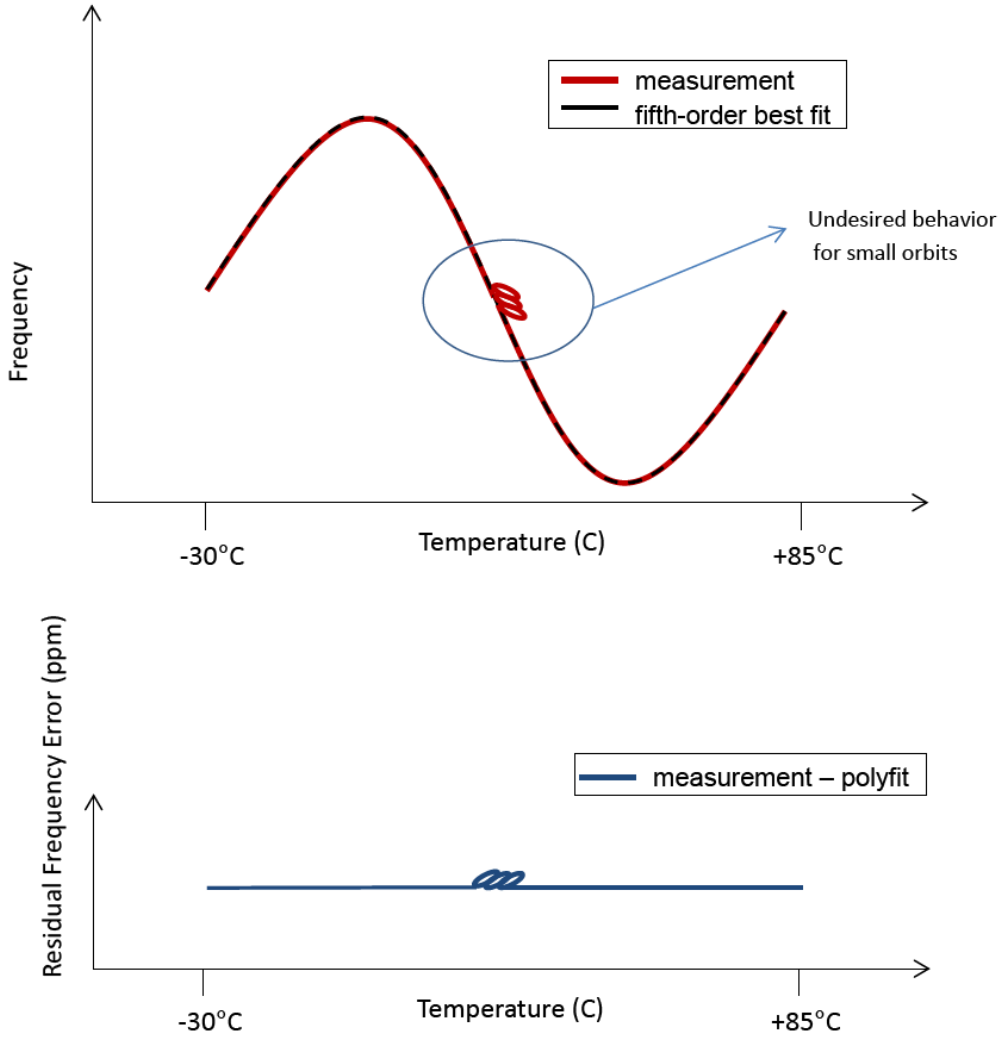


Figure 3 Measurement to locate small orbit hysteresis 1

- Specification 2 (see Figure 3 for details):
- Verify that hysteresis 2 (the gap between the cooling and heating FT curves) over small orbits is of a reasonable value, as shown in Table 4.
- These are the rapid shifts that occur when changing from cooling-to-heating or from heating-to-cooling.

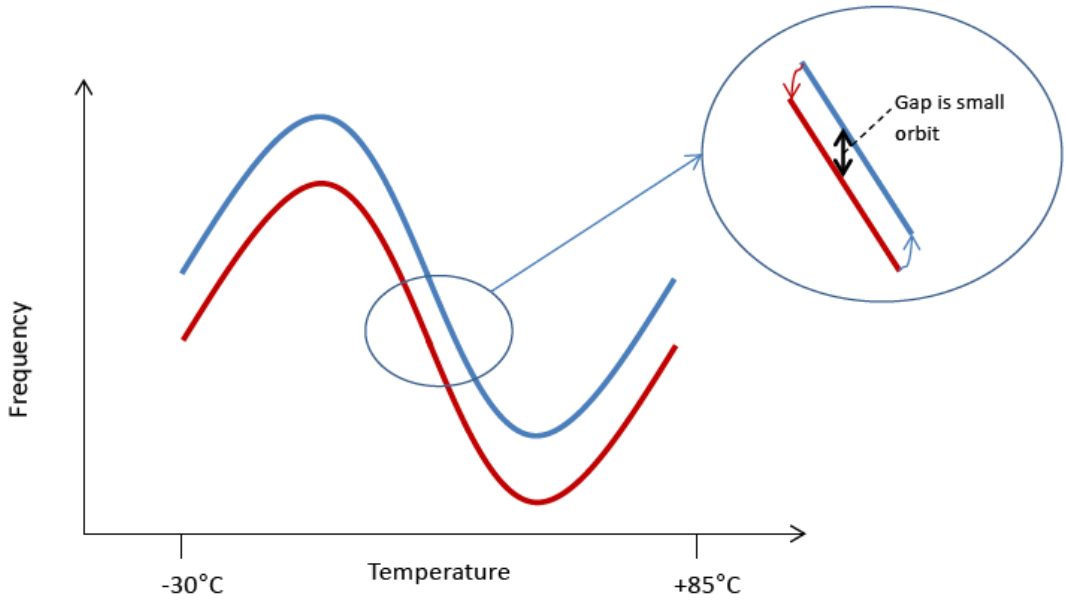


Figure 4 Measurement to locate hysteresis 2

3. Measurement technique for specifications 1 and 2:
   - A standard thermocouple should not be used because it has a 0.1°C temperature resolution and therefore can fail a 50 ppb/°C test due to measurement quantization (that is, it is not part of the real crystal FT performance curve).
   - A preferable technique to measure temperature is using the internal thermistor. As an example, voltage measurement is a feature of the 34970A Data Acquisition Unit from Agilent. Frequency can be measured via the 53131A_132A 225 MHz Agilent frequency counter. The Curve Fit Calculation Table Spreadsheet (80-V9690-23) is an Excel file with the calculations for temperature (Thermistor_Datasheet_Values tab).
   - A continuous temperature rate change of ~1.0°C (minimum) is recommended for all tests.

[3] Thermistor Specifications

Table 5 Thermistor specifications

Parameter	Min.	Nom	Max.	Units	Notes
Operating temperature	-40		+125	°C	
Storage temperature	-40		+125	°C	
Resistance		100		kΩ	25°C
B-constant		4250		K	25°C–50°C
Tolerance			1	%	
Maximum operating current			0.032	mA	at 25°C in still air (*1, *2)
Maximum voltage			5	V	at 25°C in still air (*3)
Thermal dissipation constant					at 25°C in still air (*1)

Notes :
1. Thermistor is measured at 25°C in still air, as a single unit without mounting.
2. Thermistor raises 0.1°C more by maximum operating current.
3. Voltage range shown on Fig X, can keep Temperature less than 0.1°C rise.
4. Please use Thermistor by lower voltage than the maximum operating curve.

[4] How to find the curve fitting parameters

The FT curve of an AT-cut crystal can be modeled as a third-order polynomial.
C0, C1, C2, and C3 are coefficients that need to be defined. The C1 and C3 parameters of the crystals must fall into a certain predetermined range for the system to estimate the resonant frequency of the crystal effectively. The following sections include the coefficient calculation details and a range of acceptable C1 and C3 coefficients.

1 FT data

The crystal vendors need to gather the FT data. The FT data should cover a temperature range from -30°C to 105°C. The resolution should be 1°C (linear extrapolation can be used), and the frequency value should be in ppm and reflect the deviation from the frequency at 29°C.

2 C0

C0 is the frequency offset at 29°C.

3 C1

C1 is the average slope of the FT curve between 25°C and 35°C.

4 C3 and C2

See the Curve Fit Calculation Table Spreadsheet (80-V9690-23) for the C3 and C2 parameter calculations.
■ To calculate C3, find the difference between the measured FT curve and the first-order estimation from the C1 parameter. Then, find the C3 term using the third-order least square fit method. Use 29°C as t0.
■ To calculate C2, remove the third-order and first-order terms first from the FT curve. Then, find the C2 term using the second-order least square fit method. Use 29°C as t0.

5 Coefficient range

■ C0 : ±10 %
■ C1 : -0.10 to -0.40 × 10^{-6}/°C
■ C2 : -4.5 × 10^{-4} to 4.5 × 10^{-4} × 10^{-6}/°C2
■ C3 : 8.5 × 10^{-5} to 11.5 × 10^{-5} × 10^{-6}/°C3

6 Comments

C3 needs to be calculated before C2.

[5] Environmental and mechanical characteristics

Item No.3 to No.6 shall be tested after following pre conditioning.

Pre conditioning：Test crystal must be leaving in room temperature for 24 h after reflow × 3.

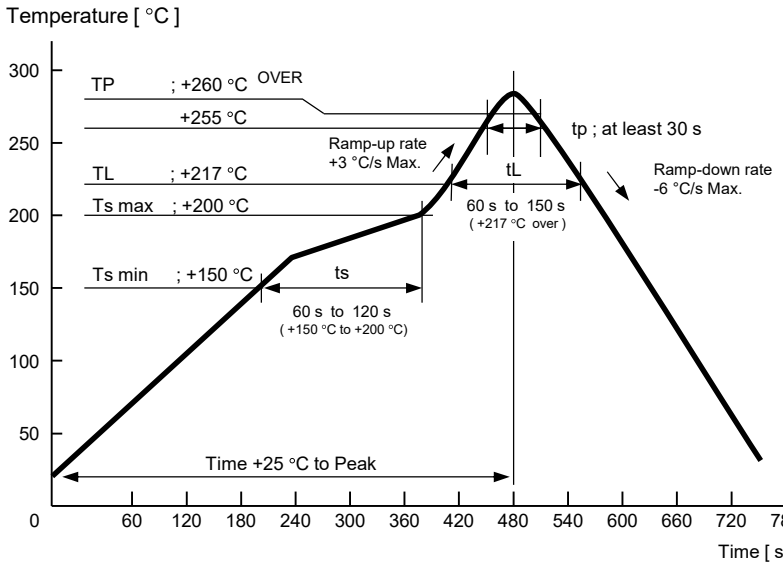
(The company evaluation condition：We evaluate it by the following examination item and examination condition.)

No.	Item	Value *1 *2		Test Conditions
		$\Delta f / f[1 \times 10^{-6}]$		
1	Free Drop	(2)	±2	Free drop from 1 200 mm height on the Concrete 3 times
2	Vibration	(2)	±2	10 Hz to 55 Hz amplitude 0.75 mm 55 Hz to 500 Hz acceleration 98 m/s^2 10 Hz → 500 Hz → 10 Hz 15 min /cycle 6 h (2 hours , 3 directions)
3	High temperature storage	(1)	±4	+125 °C × 1 000 h
4	Low temperature storage	(1)	±2	-40 °C × 1 000 h
5	Temperature cycle	(1)	±4	-40 °C ↔ +125 °C 30 minutes at each temp. 1000 cycle
6	Temperature humidity storage	(1)	±2	+85 °C × 85 %RH × 1 000 h
7	High temperature Bias	(1)	±3	+105 °C × 100uW × 1 000 h
8	Resistance to soldering heat		±2	For convention reflow soldering furnace (3 times)
9	Substrate bending	No peeling-off at a soldered part		Bend width reaches 3 mm and hold for 5 s ±1 s × 1 time Ref. IEC 60068-2-21
10	Shear	No peeling-off at a soldered part		10 N press for 10 s ±1 s Ref. IEC 60068-2-21
11	Pull – off	No peeling-off at a soldered part		10 N press for 10 s ±1 s Ref. IEC 60068-2-21
12	Solder ability	Terminals must be 95 % covered With fresh solder.		Dip termination into solder bath at +230 °C ±10 °C for 5 s (Using Rosin Flux)

< Notes >

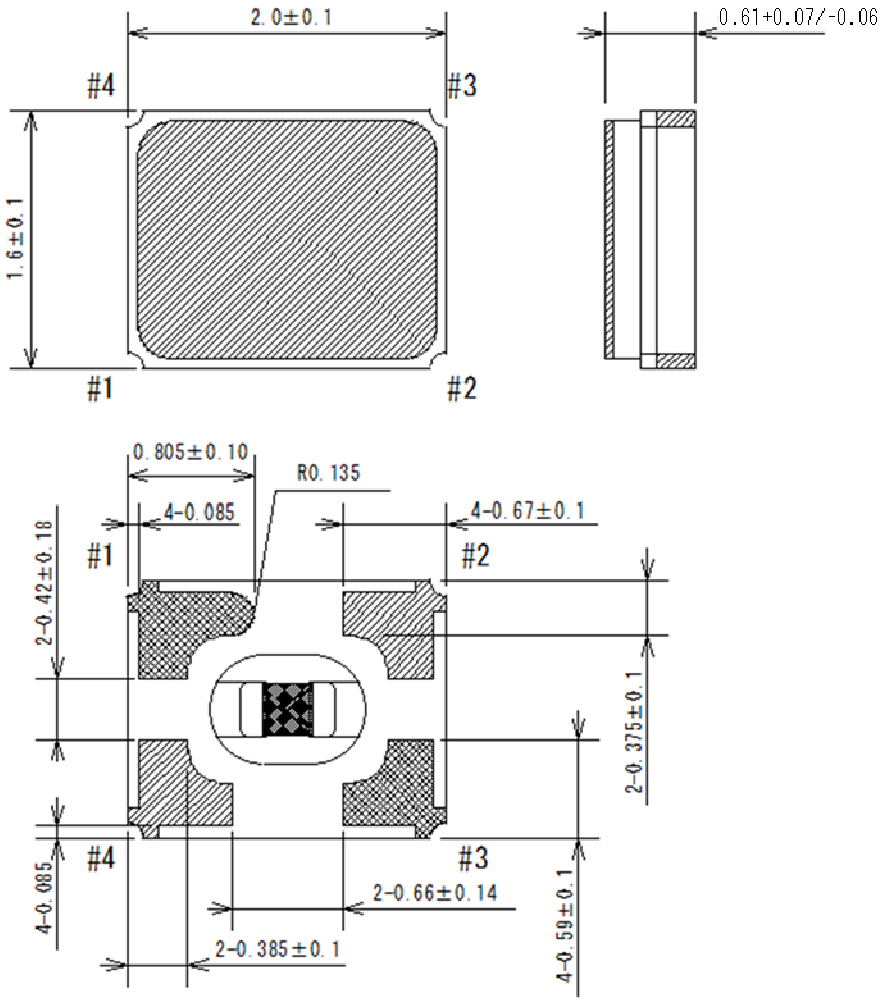
1. Item No.1 to No.7 resistance at before above tests should be less than ±20 % or less than ±10 Ω.
2. *1 Each test done independently.
3. *2 Measuring 2 h to 24 h later leaving in room temperature after each test.
   (1) Measuring 24 h later leaving in room temperature after each test.
   (2) Measuring 2 h later leaving in room temperature after each test.

Reflow condition (follow to IPC / JEDEC J-STD-020D.1)

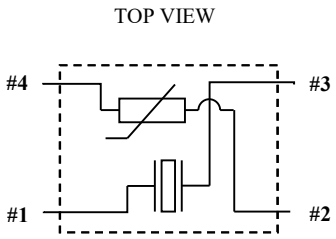


[6] Dimensions and Circuit

1) Dimension (Unit : mm)



2) Circuit



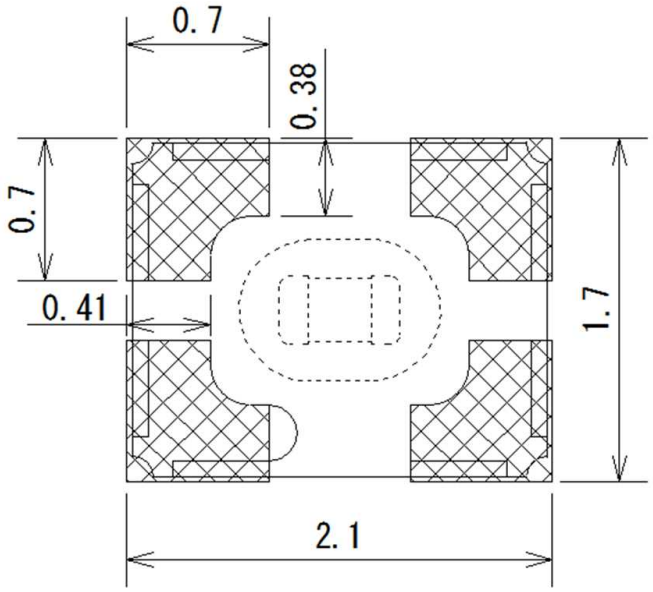
Terminal treatment : Au plate

Pin	Connection
1	XTAL
2	GND, thermistor
3	XTAL
4	Thermistor

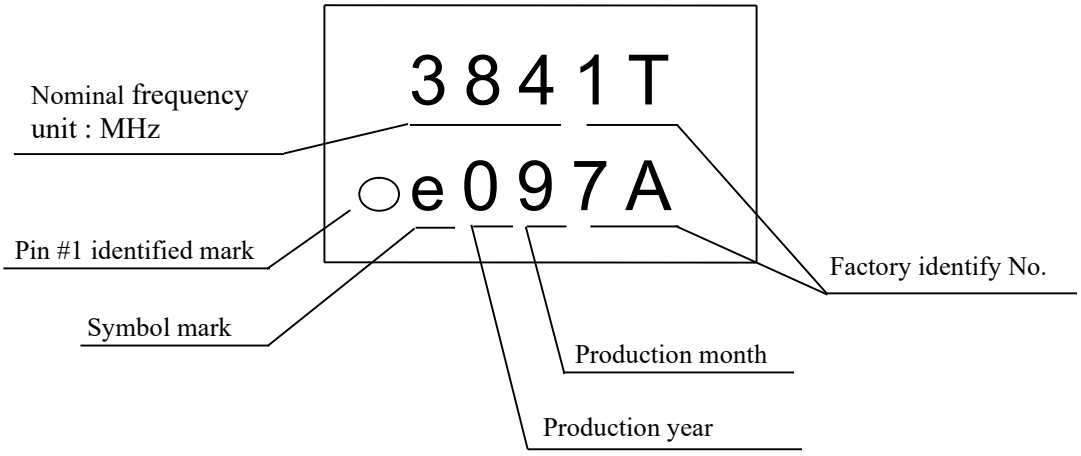
Thermistor size : 0.6 × 0.3 mm

[7] Recommended soldering pattern and Marking layout

1) Recommended soldering pattern (Unit：mm)



2) Marking layout



Production month

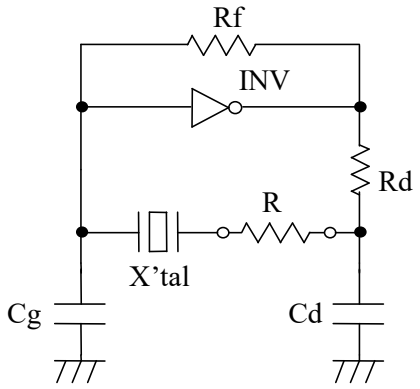
January	February	.....	October	November	December
1	2	.....	X	Y	Z

- Nominal frequency is only one example.
- Nominal frequency omits the figure below the first place of decimals.
  Ex)38.4 MHz..... [384]
- The above marking layout shows only marking contents and their approximate position and it is not for font, size and exact position.

[8] Notes

1. Max three (3) times re-flow is allowed. Its recommended to manually solder when not enough/no solder detected. (Using soldering iron at +280 °C Max. × within 5 seconds)
2. Patterning on a board should follow our company recommended pattern.
3. Applying excessive excitation force to the crystal resonator may cause deterioration damage.
4. Start up time of oscillation may be increased or no oscillation may occur unless adequate negative resistance is allocated in the oscillation circuit In order to avoid this, please provide enough negative resistance to the circuit design.

   How to check the negative resistance



(1) Connect the resister(R) to the circuit in series with the crystal Unit.

(2) Adjust R so that oscillation can start (or stop).

(3) Measure R when oscillation just start (or stop) in above (2).

(4) Get the negative resistance
-R=R+CI value.
(5) Recommended -R
[-R]>CI × 10

5. It is recommended to do patterning to the oscillator as short as possible. Abnormal oscillation may happened if the line is too long.
6. To avoid malfunction, no pattern across or near the crystal is allowed.
7. Few data or readings taken at user side may be different from our company's data. Confirmation of the different value is necessary before application.
8. Too much exciting shock or vibration may cause deterioration on damage.
   The product may damage depends on the condition such as a shock in assembly machinery.
   Please check your process condition in advance to minimize and maintain the shock level.
9. This product may be affected to ultrasonic cleaning. It is depends on the cleaning conditions.
   (Cleaning machine type/power/time/content/position etc.)
   The warranty will not cover any damage due to this type of usage. Check conditions prior to use.
10. Condensation may occur when used/stored under high humidity condition.
    Please take precautions to prevent condensation.
11. Please refer to packing specification for the storage method and packing standard.
12. Frequency aging will be expected to value the amount of frequency variation from the reliability test results.

TAPING SPECIFICATION
テープ梱包基準書

1. APPLICATION 適用範囲

This document is applicable to FA2016ASA
本基準書は、FA2016ASA のテーピング梱包について規定する。

2. CONTENTS 目次

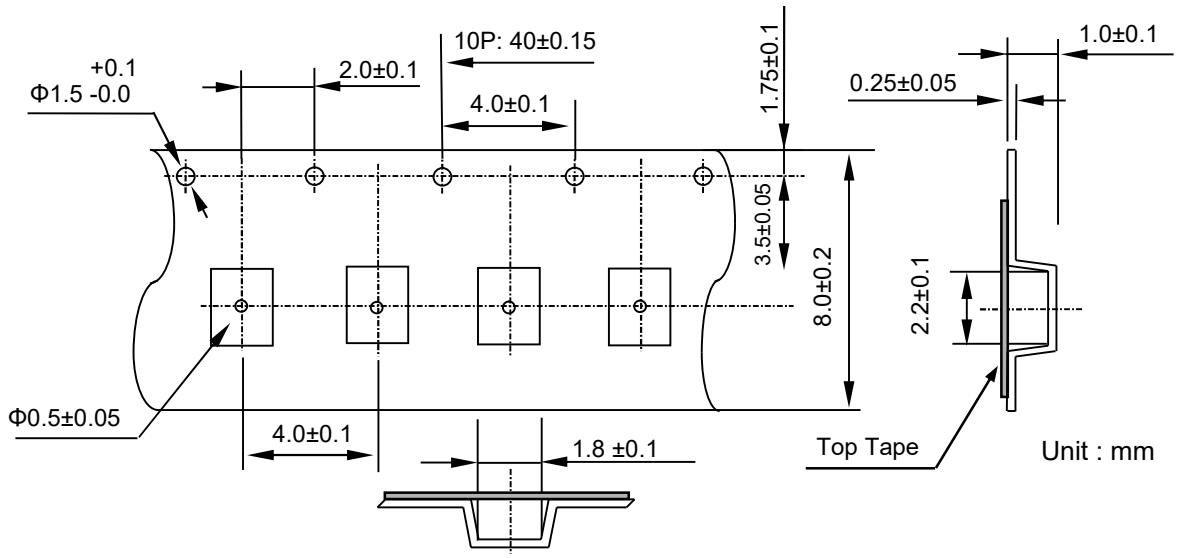
Item No.	Item	Page
[1]	**Taping specification** テーピング仕様	2 to 3
[2]	**Shipping carton** 外装箱への収納	4
[3]	**Marking** 表示	
[4]	**Quantity** 収納数量	5
[5]	**Storage environment** 保管環境	
[6]	**Handling** リール取扱い	

[1] Taping specification テーピング仕様

Subject to EIA-481 , IEC 60286 , JIS C0806.
「EIA-481」「IEC 60286」「JIS C0806」に準拠する。

(1) Tape dimensions TE0804L

Material of the Carrier Tape キャリアテープ材質: PS ()
Material of the Top Tape トップテープ材質 : PET+PE

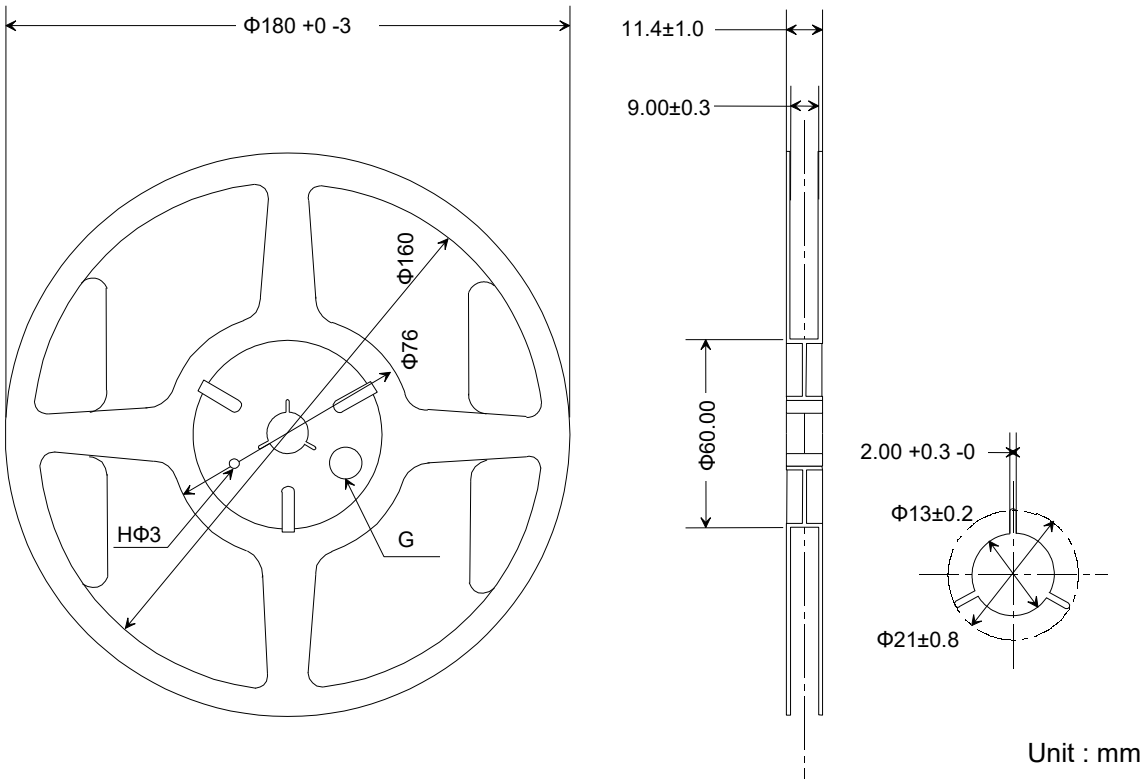


(2) Reel dimensions

EIAJ-RRM08B60

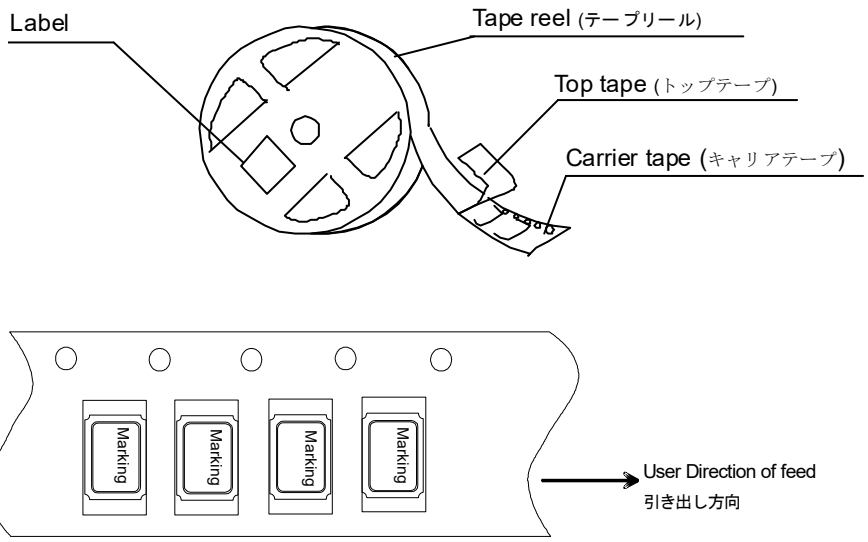
(a) Center material 中心材質 ：PS

(b) Material of the Reel リール材質: PS

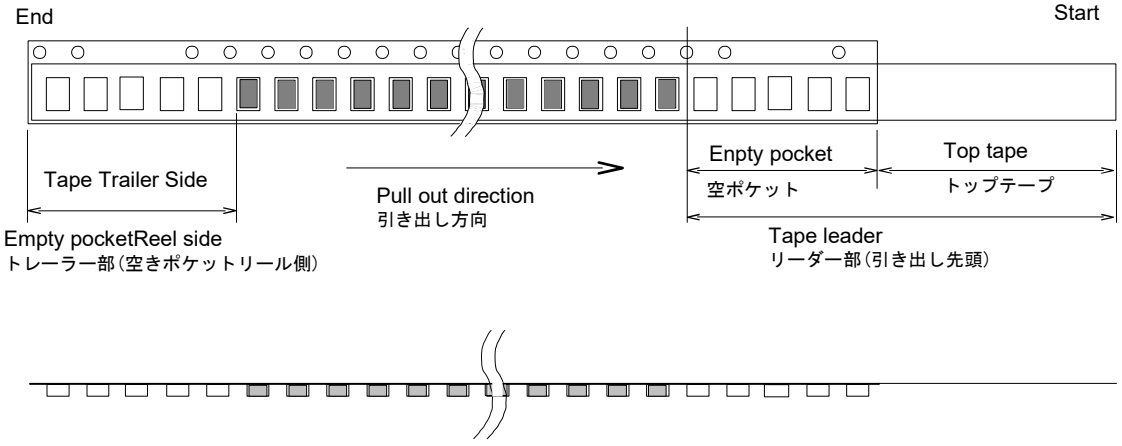


(3) Packing 収納形態

(a) Tape & Reel デバイス収納方法



(b) Start & End Point 引き出し先頭側及びリール側の処理



Item 項目		Empty Space 空きスペース	Note 備考
Tape Leader (引き出し先頭側)	Top Tape	Min. 1 000 mm	Feeding in the Top tape, the tip is fixed with tape. トップテープ単独で繰り出し、先端はテープにより固定。
	Carrier Tape	Min. 100 mm	Winding method is a diagram of the above リールへの巻き取り方法は、上図の通り。
Tape Trailer (リール側)	Top Tape	Min. 0 mm	Tip is fixed to the reel. 先端はリールに固定。
	Carrier Tape	Min. 160 mm	

(4) Peel force of the cover tape トップテープの剥離強度

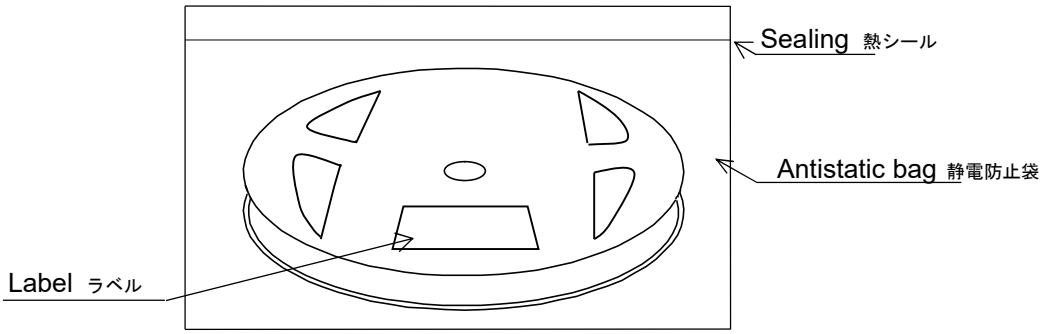
(a) angle : cover tape during peel off and the direction of unreeling shall be 165° to 180°.
剥離角度：テープの接着面に対し 165～180 度とする。

(b) peel speed : 300 mm/min
剥離速度：300 mm/min とする。

(c) peel strength : 0.1～1.0 N
剥離強度:0.1～1.0 N

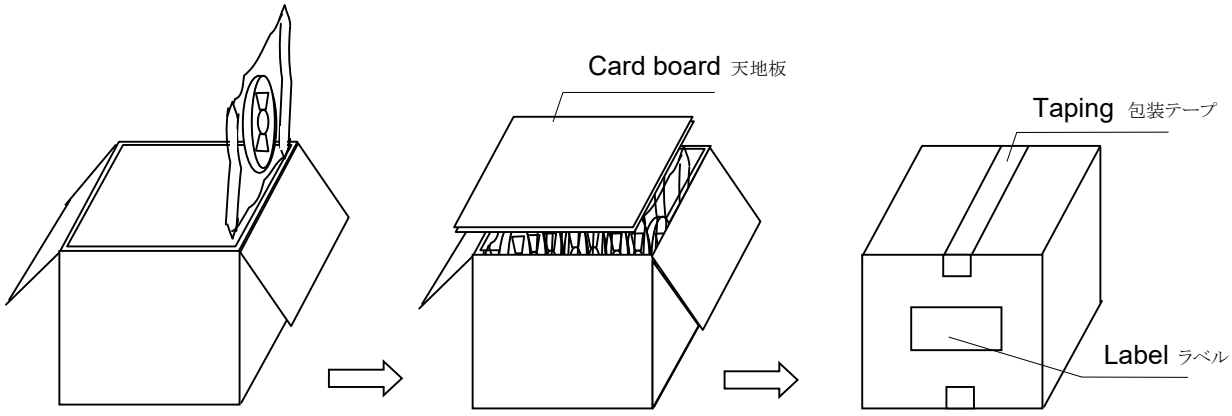
[2] Shipping carton 外装箱への収納

a) Packing to antistatic bag 袋への収納



b) Packing to shipping carton 外装箱への収納

If there is space in the outer box, material is put in a shock absorbing together.
空間ができた時は、クッション材を入れる。



[3] Marking 表示

(1) Reel marking リールへの表示

- Reel marking shall consist of

下記内容をリール表面に表示できるラベルを貼る。:

1) Parts name 製品名称
2) Quantity 製品数量
3) Manufacturing Date or symbol 製品の製造年月又はこれを示す記号
4) Manufacturer's Date or symbol 製品の製造業者又はその略号
5) Others (if necessary) その他必要事項

(2) Shipping carton marking 外装箱への表示

- Shipping carton marking shall consist of :

下記内容を外装箱表面に表示できるラベルを貼る。:

1) Parts name 製品名称
2) Quantity 製品数量

[4] Quantity 収納数量

- 3 000 pcs./reel (Standard)

  However it is not the limit, in case that the order quantity does not fill with 3 000 pieces.
  Packing quantity is defined by 14th and 15th digit of product number.
  但し、注文数量が 3 000 pcs に満たない場合は、その限りではない。
  収納数量は、製品型番の 14 桁、15 桁による。

14th and 15th digit of product number. 製品型番の 14 桁、15 桁	Quantity
01	Vinyl Bag(Bulk)
11	Any Quantity
16	3000 pcs

[5] Storage environment 保管環境

(1) Before open the packing, we recommend to keep less than +30 °C and 85 %RH of Humidity, and to use it less than 6 months after delivery.
開梱前の製品は、温度 +30 °C、湿度 85 %RH 以下での保管をして下さい。
貴社納入後、袋未開封で 6 ヶ月以内の実装を推奨します。

(2) We recommend to open Package in immediately before use. After open Package, We recommend to keeps less than 6 month. No need dry air before soldering work if it is less than temperature +30 °C, 85 humidity %RH.
使用直前まで開梱せず、袋開封後は 6 ヶ月以内の実装を推奨します。
温度 +30 °C、湿度 85 %RH 以下では、はんだ付け作業前に乾燥不要です。

(3) Not to storage with some erosive chemicals.
化学薬品類との同居を避ける。

(4) Nothing is allowed to put on the reel or carton to prevent mechanical damage
外装箱がゆがまないようまた、外圧がかからないように保管して下さい。

[6] Handling リール取扱い

To handle with care to prevent the damage of tape, reel and products.
リールの取扱いについては、中のテープ・製品を変形させないようにして下さい。

- Process Quality Control -

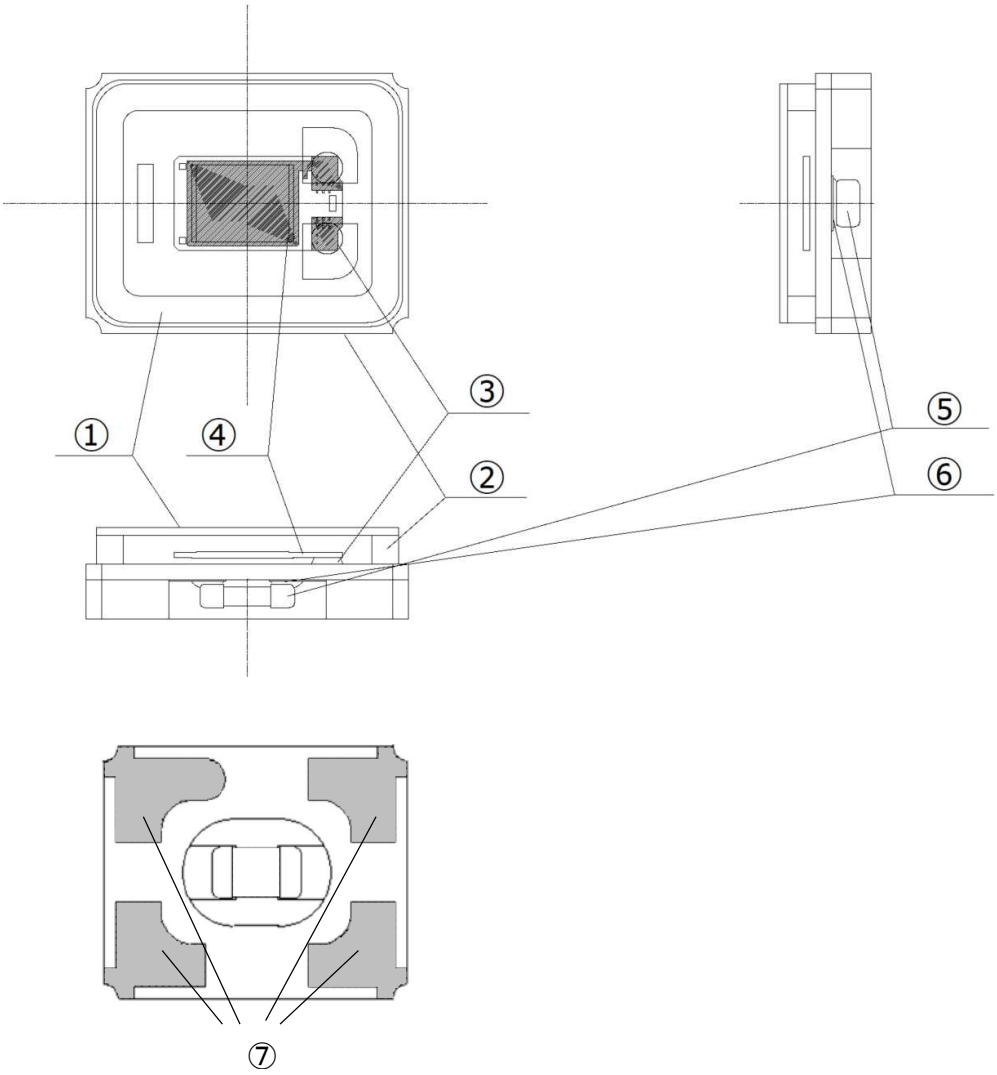
No. A-1901-01-AAE-1

SMD TYPE CRYSTAL UNIT : FA2016ASA (Crystal+Thermistor

FA2016ASAAS_Q_0001
2020.04.07

Manufacturing Process Chart	No.	Section	Standard	Inspection, Control items	Inspection method	Instrument	Record
Crystal block ▽	1	Inspecting section.	Purchasing specification Incoming inspection standard	Size. Outer appearance. Inner appearance.	Sampling. 〃 〃	Measure. Visual inspection. Visual inspection.	In-coming inspection data sheet.
◇1 In-coming inspection	1'	Inspecting section.	〃	Size. Outer appearance.	Sampling. 〃	Comparator. Micro scope.	〃
Ceramic base ② Wafer cutting	2	Inspecting section.	Manufacturing instruction sheet	Cut angle. Wafer thickness.	Sampling. 〃	X-ray raido grafic. Comparator.	Process data sheet.
③ Wafer lapping	3	Producing section.	〃	Frequency. Wafer thickness.	Sampling. 〃	Frequency counter. Comparator.	〃
◇1' In-coming inspectior ④ Photo process	4	Producing section.	〃	Size. Frequency. Outer appearance.	Sampling. 〃 〃	Comparator. Frequency counter. Micro scope.	〃
Lid ▽ ⑤ Mounting	5	Producing section.	〃	Outer appearance.	All insprcion.	Micro scope.	〃
In-coming ◇1' inspectior ⑥ Frequency adjustment	6	Producing section.	〃	Frequency.	Sampling.	Network analyzer.	〃
⑦ Welding	7	Producing section.	〃	Outer appearance.	Sampling.	Micro scope.	〃
Thermistor ▽ ⑧ High temp. treatment	8	Producing section.	〃	Temp.	Sampling.	Thermometer	〃
In-coming ◇1' inspectior ◇9 Leak test	9	Producing section.	〃	Airtightness check.	All insprcion.	Leak tester.	〃
⑩ Thermistor Mounting	10	Producing section.		Outer appearance.	Sampling.	Micro scope.	〃
◇11 Characteristic inspection Marking, Taping	11	Producing section.	〃	Temp. characteristic. Drive Level Dependency Insulation resistance. Crystal impedance. Frequency. Thermistor resistance. Outer appearance. Tape-peel strength.	Sampling. All insprcion. 〃 〃 〃 〃 〃 Sampling.	Inspection M/C. 〃 〃 〃 〃 〃 Micro scope. Peelinf force tester.	〃 〃 〃 〃 〃 〃 〃 Process data sheet.
◇12 Out-going inspection	12	Inspecting section.	Out-going inspection standard	Process data	—	—	Out-going inspection data sheet.
⑬ Packing	13	Product control section.	Manufacturing instruction sheet Packing instruction sheet	Address. Quantity.	—	—	Delivery slip.

Structure Diagram 構造図	Rev.0
Model 型式	**FA2016ASA**
Document No. 管理№.	FA2016ASA_D_0001



No.	Name of Part 部品名
①	Lid ﾘｯﾄﾞ
②	Package ﾊﾟｯｹｰｼﾞ
③	Crystal Adhesive 水晶接着
④	Crystal chip 水晶片
⑤	Thermistor ｻｰﾐｽﾀ
⑥	Solder はんだ
⑦	Terminal 端子